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10/541,258	06/29/2005	Takanori Takahashi	075834.00583	1135

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EXAMINER	
KOCH, GEORGE R	

ART UNIT	PAPER NUMBER
1791	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/541,258	TAKAHASHI ET AL.	
	Examiner	Art Unit	
	George R. Koch III	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *5/25/2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/14/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/25/2010 has been entered.

Response to Arguments

2. Applicant's arguments filed 5/25/2010 have been fully considered but they are not persuasive.

3. Applicant has amended the independent claims to recite that "the liquid spraying control data is adjusted based on carrying-speed change information and environment data in order to reduce color mis-registration in printed image data". See claim 1, claim 6, claim 11, and claim 17. However, Estelle teaches that the liquid spraying control data is adjusted based on carrying-speed change information (see paragraph 0028-31). In paragraph 0028, Estelle teaches that the input signal process 62 also receives a conveyor feedback signal provided on the output 36 of the conveyor motion sensor 34 (which is disclosed as being an encoder or resolver in paragraph 0022, which would react to speed change information by changing the rate of encoder pulses.) In paragraphs 0030-31, Estelle discloses the correlation process of the diagnostic monitor and input signal processor, and discloses that the conveyor feedback signal and feedback signal from the sensor 70 are utilized in processing. As a result, ON-OFF transitions are controlled, and

these ON-OFF transitions read on the liquid spraying control data. Additionally, Bretmersky utilzes environment data (the output of temperature sensor 102) to adjust the application (see column 8, lines 5-55, disclosing a model taking into account environment data). Bretmesky discloses that the temperature is critical for ensuring proper flow rate (see column 16, line 55 to column 18, line 23).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estelle (US 2002/0079325) in view of Bretmersky (US 5,995,909).

As to claim 1, Estelle discloses a printing apparatus (see paragraphs 0021-52) comprising: a carrying means[1] (conveyor 30, which includes rollers at the edge and is equivalent to the disclosed rollers) for carrying an object onto which liquid is to be projected; a liquid spraying means[2] (nozzle 24) having nozzles to spray the liquid as droplets onto the object having been carried to a position where the object faces the nozzles; a liquid-spraying controlling means[3] (gun driver 38) for controlling the liquid spraying means to spray the droplets from the nozzles in predetermined timing; a carrying-speed discriminating means[4] (conveyor motion sensor 34) for judging whether the carrying speed of the object has been changed or not; and a storage means[5] (pattern controller 44) having stored therein liquid-spraying control data intended for controlling the liquid-spraying timing for each type of the object, the liquid-spraying controlling means controlling the liquid-spraying means when the carrying-speed discriminating means has determined that the object carrying speed has been changed to alter currently used liuid spraying control data to spray the droplets from the nozzles in different timing from that which is before the carrying speed is changed (for example, paragraph 0023). Estelle teaches that the liquid spraying control data is adjusted based on carrying-speed change information (see paragraph 0028-31). In paragraph 0028, Estelle teaches that the input signal process 62 also receives a conveyor feedback signal provided on the output 36 of the conveyor motion sensor 34

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[1] "carrying means" meets the means plus function analysis of MPEP 2181-86 and an example is given as rollers 94/101 in Figure 12.
[2] "liquid spraying means" meets the means plus function analysis of MPEP 2181-86 and an example is given as printer 2 in Figure 12.
[3] "liquid spraying controlling means" meets the means plus function analysis of MPEP 2181-86 and an example is given as ink spray controller 123, described in paragraph 0179.
[4] "carrying speed discriminating means" meets the means plus function analysis of MPEP 2181-86 and an example is given as encoder 112 in Figure 12, which is also described in paragraph 0170.
[5] It is unclear whether storage means meets the requirements of 112 6th paragraph, since "storage" is not function language (storage is a noun, not a verb). Therefore, means plus function analysis DOES not apply to "storage means", since means is not modified by functional language. See MPEP 2181.

(which is disclosed as being an encoder or resolver in paragraph 0022, which would react to speed change information by changing the rate of encoder pulses.) In paragraphs 0030-31, Estelle discloses the correlation process of the diagnostic monitor and input signal processor, and discloses that the conveyor feedback signal and feedback signal from the sensor 70 are utilized in processing. As a result, ON-OFF transitions are controlled, and these ON-OFF transitions read on the liquid spraying control data.

Estelle, however, does not disclose an environment detecting means for detecting an ambient temperature and/or humidity when the droplets are sprayed from the nozzles; similarly, does not disclose that the liquid-spraying controlling means is controlling the liquid-spraying means on the basis of the environment data detected by the environment detecting means.

However, Bretmersky discloses an environment detecting means[6] (temperature sensor 106) for detecting an ambient temperature and/or humidity when the droplets are sprayed from the nozzles; and discloses that the liquid-spraying controlling means is controlling the liquid-spraying means on the basis of the environment data detected by the environment detecting means (through RTD interface; microprocessor 76 and the related control devices on Figure 1; see also column 7, lines 50-62). Additionally, Bretmersky utilzes environment data (the output of temperature sensor 102) to adjust the application (see column 8, lines 5-55, disclosing a model taking into account environment data). Bretmesky discloses that the temperature is critical for ensuring proper flow rate (see column 16, line 55 to column 18, line 23). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to have utilized environment detecting means in order to ensure that the flow is properly controlled.

As to claim 6, Estelle discloses a printing method to be employed in a liquid spraying apparatus (see paragraphs 0021-52) comprising: carrying an object (by conveyor 30, which includes rollers at the edge and is equivalent to the disclosed rollers) onto which liquid is to be projected in a predetermined direction via a carrying mechanism; spraying the liquid (nozzle 24) as droplets onto the object by a liquid spraying mechanism having nozzles having been carried to a position where the object faces the nozzles; controlling the liquid spraying means to spray the droplets from the nozzles in predetermined timing with a liquid-spraying controlling mechanism (gun driver 38) for; judging whether the carrying speed of the object has been changed or not with a carrying-speed discriminating mechanism (conveyor motion sensor 34); and storing liquid-spraying control data intended for controlling the liquid-spraying timing for each type of the object, spraying droplets from the nozzles at a different timing when the carrying-speed detecting mechanism has determined that the object carrying speed has been changed (for example, paragraph 0023). Estelle teaches that the liquid spraying control data is adjusted based on carrying-speed change information (see paragraph 0028-31). In paragraph 0028, Estelle teaches that the input signal process 62 also receives a conveyor feedback signal provided on the output 36 of the conveyor motion sensor 34 (which is disclosed as being an encoder or resolver in paragraph 0022, which would react to speed change information by changing the rate of encoder pulses.) In paragraphs 0030-31, Estelle discloses the correlation process of the diagnostic monitor and input signal processor, and discloses that the conveyor feedback signal and feedback signal from the sensor 70 are utilized in processing. As a result, ON-OFF transitions are controlled, and these ON-OFF transitions read on the liquid spraying control data.

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[6] "environment detecting means" meets the means plus function analysis of MPEP 2181-86 and an example is given

Estelle, however, does not disclose detecting an ambient temperature and/or humidity when the droplets are sprayed from the nozzles with an environment detecting mechanism; similarly, does not disclose that the liquid-spraying controlling mechanism is controlling the liquid-spraying means on the basis of the environment data detected by the environment detecting means.

However, Bretmersky discloses an environment detecting mechanism (temperature sensor 106) for detecting an ambient temperature and/or humidity when the droplets are sprayed from the nozzles; and discloses that the liquid-spraying controlling means is controlling the liquid-spraying mechanism on the basis of the environment data detected by the environment detecting means (through RTD interface; microprocessor 76 and the related control devices on Figure 1; see also column 7, lines 50-62). Additionally, Bretmersky utilzes environment data (the output of temperature sensor 102) to adjust the application (see column 8, lines 5-55, disclosing a model taking into account environment data). Bretmesky discloses that the temperature is critical for ensuring proper flow rate (see column 16, line 55 to column 18, line 23). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to have utilized environment detecting means in order to ensure that the flow is properly controlled.

As to claim 11, Estelle discloses a printing apparatus (see paragraphs 0021-52) comprising: a carrying means[7] (conveyor 30, which includes rollers at the edge and is equivalent to the disclosed rollers) for carrying an object onto which liquid is to be projected in a

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as temperature sensor 74 in Figure 12. See also paragraph 0175.

[7] "carrying means" meets the means plus function analysis of MPEP 2181-86 and an example is given as rollers 94/101 in Figure 12.

predetermined direction; a liquid spraying means[8] (nozzle 24) having nozzles to spray the liquid as droplets onto the object having been carried to a position where the object faces the nozzles; a liquid-spraying controlling means[9] (gun driver 38) for controlling the liquid spraying means to spray the droplets from the nozzles in predetermined timing; a carrying-speed discriminating means[10] (conveyor motion sensor 34) for judging whether the carrying speed of the object has been changed or not;

a droplet-projected position detecting means (via either sensor 70; see also paragraphs 0030-0052) for detecting a displacement of droplet-projected position, which arises when the droplets are projected in a predetermined pattern on the object being carried because the object carrying speed has been changed;

a data generating means for generating (such as diagnostic monitor 60 and the subelements), liquid-spraying control data intended for controlling the liquid-spraying timing to correct the displacement of droplet-projected position detected by the liquid--protected position detecting means; and

and a storage means[11] (pattern controller 44) having stored therein liquid-spraying control data intended for controlling the liquid-spraying timing,

the liquid-spraying controlling means controlling the liquid-spraying means when the carrying-speed discriminating means has determined that the object carrying speed has been

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[8] "liquid spraying means" meets the means plus function analysis of MPEP 2181-86 and an example is given as printer 2 in Figure 12.
[9] "liquid spraying controlling means" meets the means plus function analysis of MPEP 2181-86 and an example is given as ink spray controller 123, described in paragraph 0179.
[10] "carrying speed discriminating means" meets the means plus function analysis of MPEP 2181-86 and an example is given as encoder 112 in Figure 12, which is also described in paragraph 0170.
[11] It is unclear whether storage means meets the requirements of 112 6th paragraph, since "storage" is not function language (storage is a noun, not a verb). Therefore, means plus function analysis DOES not apply to "storage means", since means is not modified by functional language. See MPEP 2181.

changed on the basis of the liquid-spraying control data stored in the storage means to spray the droplets from the nozzles in different timing from that which is before the carrying speed is changed (for example, paragraph 0023). Estelle teaches that the liquid spraying control data is adjusted based on carrying-speed change information (see paragraph 0028-31). In paragraph 0028, Estelle teaches that the input signal process 62 also receives a conveyor feedback signal provided on the output 36 of the conveyor motion sensor 34 (which is disclosed as being an encoder or resolver in paragraph 0022, which would react to speed change information by changing the rate of encoder pulses.) In paragraphs 0030-31, Estelle discloses the correlation process of the diagnostic monitor and input signal processor, and discloses that the conveyor feedback signal and feedback signal from the sensor 70 are utilized in processing. As a result, ON-OFF transitions are controlled, and these ON-OFF transitions read on the liquid spraying control data.

Estelle, however, does not disclose an environment detecting means for detecting an ambient temperature and/or humidity when the droplets are sprayed from the nozzles; and similarly, does not disclose that the liquid-spraying controlling means is controlling the liquid-spraying means on the basis of the environment data detected by the environment detecting means.

However, Bretmersky discloses an environment detecting means[12] (temperature sensor 106) for detecting an ambient temperature and/or humidity when the droplets are sprayed from the nozzles; and discloses that the liquid-spraying controlling means is controlling the liquid-spraying means on the basis of the environment data detected by the environment detecting

means (through RTD interface; microprocessor 76 and the related control devices on Figure 1; see also column 7, lines 50-62). Additionally, Bretmersky utilzes environment data (the output of temperature sensor 102) to adjust the application (see column 8, lines 5-55, disclosing a model taking into account environment data). Bretmesky discloses that the temperature is critical for ensuring proper flow rate (see column 16, line 55 to column 18, line 23). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to have utilized environment detecting means in order to ensure that the flow is properly controlled.

As to claim 17, Edwards discloses a liquid spraying method to be employed in a liquid spraying apparatus (see paragraphs 0021-52) comprising: carrying an object onto which liquid is to be projected in a predetermined direction a carrying mechanism (conveyor 30, which includes rollers at the edge and is equivalent to the disclosed rollers);

spraying the liquid as droplets onto the object having been carried to a position where the object faces the nozzles with a liquid spraying mechanism (nozzle 24) having nozzles to spray and project;

controlling the liquid spraying mechanism (gun driver 38) to spray the droplets from the nozzles in predetermined timing;

judging whether the carrying speed of the object has been changed or not with a carrying-speed discriminating mechanism (conveyor motion sensor 34);

a droplet-projected position detecting means (via either sensor 70; see also paragraphs 0030-0052) for detecting a displacement of droplet-projected position, which arises when the

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[12] "environment detecting means" meets the means plus function analysis of MPEP 2181-86 and an example is given as temperature sensor 74 in Figure 12. See also paragraph 0175.

object carrying speed has been changed with a droplet-projected position detecting means (via either sensor 70; see also paragraphs 0030-0052);

generating (such as by diagnostic monitor 60 and the subelements) liquid-spraying control data intended for controlling the liquid-spraying timing to correct the displacement of droplet-projected position detected by the liquid--protected position detecting mechanism; and

storing the liquid-spraying control data (such as by pattern controller 44),

when the carrying-speed discriminating mechanism has determined that the object carrying speed has been changed, the liquid-spraying controlling mechanism controls the liquid-spraying mechanism on the basis of the liquid-spraying control data to spray the droplets from the nozzles in different timing from that which is before the carrying speed is changed (for example, paragraph 0023). Estelle teaches that the liquid spraying control data is adjusted based on carrying-speed change information (see paragraph 0028-31). In paragraph 0028, Estelle teaches that the input signal process 62 also receives a conveyor feedback signal provided on the output 36 of the conveyor motion sensor 34 (which is disclosed as being an encoder or resolver in paragraph 0022, which would react to speed change information by changing the rate of encoder pulses.) In paragraphs 0030-31, Estelle discloses the correlation process of the diagnostic monitor and input signal processor, and discloses that the conveyor feedback signal and feedback signal from the sensor 70 are utilized in processing. As a result, ON-OFF transitions are controlled, and these ON-OFF transitions read on the liquid spraying control data.

Estelle, however, does not disclose detecting an ambient temperature and/or humidity when the droplets are sprayed from the nozzles with an environment detecting apparatus; and similarly, does not disclose that the liquid-spraying controlling mechanism is controlling the

liquid-spraying means on the basis of the environment data detected by the environment detecting mechanism.

However, Bretmersky discloses detecting an ambient temperature and/or humidity when the droplets are sprayed from the nozzles with an environment detecting mechanism (temperature sensor 106); and discloses that the liquid-spraying controlling means is controlling the liquid-spraying means on the basis of the environment data detected by the environment detecting means (through RTD interface; microprocessor 76 and the related control devices on Figure 1; see also column 7, lines 50-62). Additionally, Bretmersky utilzes environment data (the output of temperature sensor 102) to adjust the application (see column 8, lines 5-55, disclosing a model taking into account environment data). Bretmesky discloses that the temperature is critical for ensuring proper flow rate (see column 16, line 55 to column 18, line 23). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to have utilized environment detecting means in order to ensure that the flow is properly controlled.

As to claim 3 and 13, Estelle discloses that the carrying means includes a feed roller (the first roller, attached to conveyor motor 32) that rotates about its own axis and a delivery roller (attached to conveyor motion sensor 34) located downstream in the object carrying direction in relation to the liquid spraying means to rotate about its own axis at a higher speed than the feed roller.

As to claim 4 and 14, Estelle discloses that the carrying-speed discriminating means (conveyor motion sensor 34) includes a trailing-end sensor (sensor 41) located upstream of the liquid-spraying means in the object-carrying direction to detect the trailing end of the object in the carrying direction and which determines that the carrying speed has been changed.

As to claim 5, Estelle discloses that the nozzles of the liquid-spraying means are disposed side by side generally in line in a direction generally perpendicular to the object-carrying direction (see Figure 1).

As to claim 8 and 19, Estelle discloses that as the carrying means, there are provided a feed roller (the roller connected to conveyor motor 32) located upstream of the liquid-spraying mechanism in the object carrying direction to rotate about its own axis, and a delivery roller (the roller connected to conveyor motion sensor 34) located downstream of the liquid-spraying mechanism in the object carrying direction to rotate about its own axis at a higher speed than the feed roller.

As to claim 9 and 20, Estelle discloses that the carrying-speed discriminating mechanism (conveyor motion sensor 34) includes a trailing-end sensor (sensor 41) located upstream of the liquid-spraying mechanism in the object-carrying direction to detect the trailing end of the object in the carrying direction and which determines that the carrying speed has been changed.

As to claim 10 and 22, Estelle discloses that the nozzles are disposed side by side generally in line in a direction generally perpendicular to the object-carrying direction (see Figure 1).

As to claim 15 and 21, Estelle discloses that the storage means has pre-stored therein the liquid-spraying control data for the type of the object, and that the data is prestored (see pattern controller 44, see also paragraph 0023).

As to claim 16, Estelle discloses that the nozzles are disposed side by side generally in line in a direction generally perpendicular to the object-carrying direction (see Figure 1).

7. Claims 2, 7, 12, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estelle and Bretmersky as applied to claims 1, 6, 11, and 17 above, and further in view of Edwards (US 2004/0231594).

As to claim 2, and 7, Estelle discloses the liquid-spraying controlling means controls, taking a position to which the droplets sprayed from the nozzle located downstream in the object-carrying direction as a reference droplet-projected position (see operation of the pattern controller 44)

However, Estelle does not disclose that the liquid spraying means has a plurality of the nozzles disposed side by side in the object-carrying direction to spray the droplets toward the object first from the upstream nozzle in the object-carrying direction and finally from the downstream one in this order in the object-carrying direction

Edwards discloses that the liquid spraying means has a plurality of the nozzles disposed side by side in the object-carrying direction to spray the droplets toward the object first from the upstream nozzle in the object-carrying direction and finally from the downstream one in this order in the object-carrying direction (see paragraph 0060, disclosing that between 1 and 256

nozzles can be contemplated). Edwards also discloses that control of these nozzles can be acheived, and that this control can achieve precise discharge (see paragraphs 0058-0061). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to have utilized the nozzles and controls of Edwards in order to achieve precise discharge.

The rejection of claims 12 and 18 is on similar grounds. Estelle discloses the droplet-projected position detecting means detects, taking a position to which the droplets sprayed from the nozzle located downstream in the object-carrying direction are projected as a reference droplet-projected position, a displacement of the position to which the droplets sprayed from the other nozzle than the one located downstream are projected from the reference droplet-projected position; and the data generating means generates the liquid-spraying control data intended for controlling the timing of liquid spraying from the other nozzle than the one located downstream so that the droplets sprayed from the other nozzle than the one located downstream will be projected to the generally same position as the reference droplet-projected position before the nozzle located downstream sprays the droplets.

Estelle does not disclose the liquid spraying means has a plurality of the nozzles disposed side by side in the object-carrying direction to spray the droplets toward the object first from the upstream nozzle in the object-carrying direction and finally from the downstream one in this order in the object-carrying direction.

Edwards discloses that the liquid spraying means has a plurality of the nozzles disposed side by side in the object-carrying direction to spray the droplets toward the object first from the

upstream nozzle in the object-carrying direction and finally from the downstream one in this order in the object-carrying direction (see paragraph 0060, disclosing that between 1 and 256 nozzles can be contemplated). Edwards also discloses that control of these nozzles can be acheived, and that this control can achieve precise discharge (see paragraphs 0058-0061). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to have utilized the nozzles and controls of Edwards in order to achieve precise discharge.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-866-377-8642 and giving the operator the above TDD number. The examiner can also be reached by E-mail at george.koch@uspto.gov in accordance with MPEP 502.03. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip Tucker can be reached on (571) 272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George R. Koch III/
Primary Examiner, Art Unit 1791

6/7/2010